

Computational problem solving architectural design based on multi-agent.

ABSTRACT

The application of problem solving methods is seemed to be difficult for novice students in computer programming field. Hence, majority of them prefer to go straight to the last stage to collect information by analyzing source code. Indeed, introducing an efficient solution for this problem will help them to figure out programming problems properly as well as saving time. Nevertheless, computational problem solving systems are not as applicable as enough to be contributed to complex problems craving intelligent analysis. So, intelligent agents tie with problem solving methods to conquer the mentioned issue. Here, a new system mapped by prometheus design tool (PDT) has been introduced. Likewise, the textualized problem to be given to the system and then problem analysis chart (PAC), input process output (IPO) chart, flowchart and algorithm will be produced. The designed problem solving system in this work comprises five agents, namely GUI, PAC, IPO, flowchart and algorithm agents interacting with the environment by percepts and actions. Additionally, there exists extraction, transformation and module number generation processes covering with three scenarios: 'Extract Scenario', 'Transform Scenario' and 'Generate Module Number Scenario'. The system specification, the architectural design and the detailed design are produced based on the analysis overview diagram and the scenario diagram.

Keyword: Computational problem solving; Problem solving method; Intelligent agents; Prometheus Design Tool(PDT).